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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/867,736	YANG ET AL.	
	Examiner	Art Unit	
	LUN LAO	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This action is response to the amendment filed on 01-23-2008. Claims 1, 10, 17 and 28-29 have been amended. Claims 1-29 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-9, 17-18 and 20-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paisley (US PAT. 5,530,760) in view of Eid et al. (US PAT. 7,177,432).

Consider claim 1 Paisley discloses an audio post processing method comprising the following sequenced steps:

matrix mixing an audio signal (see fig.1 (24)), then

decoding a surround channel of the audio signal (i.e. two source signals of an L total signal (Lt) and R total signal (Rt) are supplied to an adaptive matrix circuit 24 to be decoded into four channel signals of a front left channel (Lch) signal, center channel (Cch) signal, front right channel (Rch) signal, and a surround channel (Sch) signal. This meets the claim limitation matrix mixing an audio signal, then decoding a surround

channel of the audio signal because the matrix mixing performs the decoding of the audio signal), then directing a low frequency input channel of the audio signal to a low frequency effect compatible speaker (i.e. any one of the channels, Lch, Rch, Cch, Sch, can be the low frequency input channel because it contain low frequency and is directed to a speaker, which is compatible of producing the low frequency), transmitting discrete ambient noise containing channel of the audio signal to a speaker system operable to create a three dimensional effect (i.e. Lch, Rch, Cch, Sch)(Fig. 1; col. 1 line 20-col. 2 line 57), then center channel equalizing the audio signal (16)(Fig. 1 and see col. 3 line 65-col. 4 line 67); but Paisley does not explicitly teach a discrete digital processing such as claimed.

However, Eid discloses an audio post processing method for digitally encoded audio, comprising the following sequenced processes:

matrix mixing a digital audio signal(see fig. 2(226)), then

decoding (228) a discrete digital surround channel of the matrix mixed audio signal, then outputting a discrete digital low frequency input channel of the matrix mixed audio signal to a low frequency effect compatible speaker(see figs 1-2 and col. 4 line 1- col. 5 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Eid into Paisley to provide the sound processing system to generate mixed output signals having active matrix decoded signals using the left and right virtual stereo signals and higher fidelity audio signal.

Consider claim 3-5 Paisley teaches that the matrix mixing the audio signal further comprises extracting at least four channels from the matrix mixed audio signal (see fig.1, (14-17); and a centrally-located loudspeaker with a center channel of the matrix mixed audio signal (see fig.1 (16)); and The audio post processing method according to claim 1, further comprising driving a plurality of loudspeakers positioned towards the rear and to the sides of a listener with the surround channel of the matrix mixed audio signal(Fig. 1 and see col. 3 line 65-col. 4 line 67).

Consider claim 6, Paisley discloses using a bass channel of the signal to drive a low frequency effect loudspeaker (i.e. speaker 6L or speaker 6R can be
a low frequency effect loudspeaker because it is capable to product low frequency audio signal) (Figs. 1 (14-17)).

Consider claim 7, Paisley discloses transmitting ambient noise to the plurality loudspeakers positioned towards the rear and the sides of the listener (see fig.1 (14-17).

Consider claim 8, Paisley discloses transmitting ambient noise to a loudspeaker positioned towards the front of a listener to create an encompassed impression therein (14-17)(Fig. 1 and see col. 3 line 65- col. 4 line 67).

Consider claim 9, Paisley discloses inputting a listener preference and available equipment status into a player console, wherein the listener preference reflects a desired post processing effect inherently (column 2, lines 4-63).

Consider claim 17, Paisley discloses an audio post-processing system, comprising:
a plurality of decoders operable to perform the following sequenced steps:
an audio post processing method comprising the following sequenced steps:

matrix mixing an audio signal (see fig. 1(24)), then

decoding (24 in fig.1) a discrete surround channel of the audio signal (i.e. a decoder decoding input signals in which multichannel signals are encoded to output multichannel signals) (Figs. 1 and 14-17), then

outputting a discrete low frequency input channel of the signal to a low frequency effect compatible speaker (Figs. 1 and 14-17, reference low pass filter),

transmitting a discrete ambient noise (22) containing channel of the signal to a speaker system operable to create a three dimensional effect (Figs. 1 and 14-17, 14-16, and surround speaker), then

center channel equalizing the input signal (i.e. equalize the gain of the master volume control for the L channel with the gain of the amplifier for the C channel, therefore meets center channel equalizing);

a signal source producing (24) the matrix mixed audio a signal comprised of a plurality of discrete channels, each channel operable to drive a loudspeaker positioned at one or more of a plurality of positions (Figs. 1 and 14-17 see col. 3 line 65-col. 4 line 67). But Paisley does not explicitly disclose matrix mixing a digital audio signal and a player console operable to receive system listener input.

However, Edit discloses matrix mixing a digital audio signal (see fig.2 (226)) and a player console(212) operable to receive system listener input(see figs 1-2 and col. 4 line 1- col. 5 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Shennib into Paisley to provide more convenience for the user to enter the input signal and higher fidelity audio signal.

Consider claim 18, Paisley discloses output amplifiers operable to drive a loudspeaker positioned at one or more of the following positions relative to a listener: front, right, left and rear (Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claim 20, Paisley discloses said listener input reflects listener preference and the disposition of available equipment (Figs. 1 and 14-17 see col. 3 line 65-col. 4 line 67).

Consider claim 21, Paisley discloses surround sound channel output amplifiers (reads on 32 in fig.1 (32) master volume control) driving loudspeakers positioned towards the rear (17, surround sound) and sides of a listener (Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claim 22, Paisley discloses a center channel (16 in fig.1) equalizer output amplifier (4B) driving a loudspeaker positioned towards the front and center of a listener (Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claim 23, Paisley discloses a bass channel amplifier driving a low frequency effect loudspeaker (i.e. speaker L or speaker R can be a low frequency effect loudspeaker because it is capable to product low frequency audio signal) (Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claim 24, Paisley as modified by Eid discloses the at least one decoder utilize digital cinema sound techniques to direct ambient noise channels of the audio

signal to loudspeakers positioned towards the rear of the listener (Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claim 25 Paisley discloses the at least one decoder utilizes a virtual enhanced sound algorithm to direct an ambient noise channel of the audio signal to loudspeakers positioned towards the front of the a listener(Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claims 26-27, Paisley discloses the at least one decoder create a center channel of the matrix mixed audio signal for driving a loudspeaker that is centrally located with respect to a listener(Figs. 1 and 14-17 see col. 2 line 4-63); and the at least one decoder creates the surround sound channel for ambient noise and for driving two loudspeakers that are located to the right and left behind the a listener (Figs. 1 and 14-17 see col. 2 line 4-63).

Consider claim 28 Paisley teaches that an audio post processing system, comprising:

at least one decoder operable to perform the following sequenced steps processes:

matrix mixing an audio signal (see fig.1 (24)), then

decoding a discrete surround channel of the matrix mixed audio signal, then

outputting discrete low frequency input channels to a bass compatible speaker(Figs. 1 and 14-17 see col. 2 line 4-63); and

a signal source producing the audio signal comprised of a plurality of discrete channels, each channel operable to drive a loudspeaker positioned at one or more of a plurality of destinations(Figs. 1 and 14-17 see col. 3 line 65-col. 4 line 67); but Paisley

does not explicitly teach matrix mixing a digital audio signal; and applying a headphone algorithm; a player console operable to receive a listener input; and a signal source producing the digital audio signal comprised of a plurality of discrete channels, each channel operable to drive a loudspeaker positioned at one or more of a plurality of destinations.

However, Eid teaches matrix mixing a digital audio signal (see fig.2),

then decoding a discrete surround channel of the matrix mixed audio signal, then outputting discrete low frequency input channels to a bass compatible speaker, then a player console operable to receive a listener input (212); and

a signal source producing the digital audio signal comprised of a plurality of discrete channels, each channel operable to drive a loudspeaker positioned at one or more of a plurality of destinations (see figs 1-2 and col. 4 line 1- col. 5 line 67).

On the other hand, applying a headphone algorithm to the matrix mixed audio signal is well known in the art (official notice is taken).

Therefore, it would have been obvious that the audio system as taught by Eid could have been applying a headphone algorithm to the matrix mixed audio signal as claimed to provide such a headphone algorithm to the matrix mixed in order allow the user to connect a headphone to the system and still create a three dimensional effect .

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Eid into Paisley to provide

the sound processing system to generate mixed output signals having active matrix decoded signals using the left and right virtual stereo signals and higher fidelity audio signal.

Consider claim 29 Paisley teaches that an audio post processing method comprising performing a sequence selected from the group consisting of:

a) matrix mixing an audio signal and decoding a discrete surround channel of the matrix mixed audio signal;

b) matrix mixing the audio signal, decoding the discrete surround channel, and outputting a low frequency input channel of the matrix mixed audio signal to a discrete low frequency effect compatible speaker (14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67);

c) matrix mixing the audio signal and directing outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker (14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67);

d) matrix mixing the audio signal, decoding the discrete surround channel, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and transmitting discrete ambient noise containing channel of the matrix mixed audio signal to a speaker system operable to create a three dimensional effect(i.e. Lch, Rch, Cch, Sch)(Fig. 1; col. 1 line 20-col. 2 line 57);

e) matrix mixing the audio signal, decoding the discrete surround channel, and transmitting the discrete ambient noise containing channel of the signal to the speaker

system operable to create the three dimensional effect (i.e. Lch, Rch, Cch, Sch)(Fig. 1; col. 1 line 20-col. 2 line 57);

f) matrix mixing the audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect(i.e. Lch, Rch, Cch, Sch)(Fig. 1; col. 1 line 20-col. 2 line 57);

g) matrix mixing the audio signal and transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect (i.e. Lch, Rch, Cch, Sch)(Fig. 1; col. 1 line 20-col. 2 line 57);

h) matrix mixing the audio signal, decoding the discrete surround channel, directing outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect, and center channel equalizing the input signal(14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67);

i) matrix mixing the audio signal, decoding the discrete surround channel, and center channel equalizing the matrix mixed audio signal;

j) matrix mixing the audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and

center channel equalizing the matrix mixed audio signal(14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67);

k) matrix mixing the audio signal, transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect, and center channel equalizing the matrix mixed audio signal(i.e. Lch, Rch, Cch, Sch)(Fig. 1; col. 1 line 20-col. 2 line 57);

l) matrix mixing the audio signal, decoding the discrete surround channel of the matrix mixed audio signal, directing outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and center channel equalizing the matrix mixed audio signal(14-17 in Fig. 1 and see col. 3 line 65-col. 4 line 67);

m) matrix mixing the audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect, and center channel equalizing the matrix mixed audio signal(14-17 in Fig. 1 and see col. 3 line 65-col. 4 line 67); and

n) matrix mixing and center channel equalizing the matrix mixed audio wherein matrix mixing always precedes decoding the surround channel, outputting the low frequency input channel, transmitting the discrete ambient noise containing channel, and center channel equalizing the matrix mixed audio signal, wherein decoding the surround channel of the audio signal always precedes outputting the low frequency input channel,

transmitting the ambient noise containing channel, and center channel equalizing the matrix mixed audio signal(14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67); ,

wherein outputting the low frequency input channel always precedes transmitting the ambient noise containing channel, and center channel equalizing the matrix mixed audio signal, and

wherein transmitting the discrete ambient noise containing channel always precedes center channel equalizing the matrix mixed audio signal(14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67); but Paisley does not explicitly teach a discrete digital processes such as claimed.

However, Eid discloses a) matrix mixing a digital audio signal and decoding a discrete surround channel of the matrix mixed audio signal(see fig.2);
b) matrix mixing the digital audio signal, decoding the discrete surround channel, and outputting a discrete low frequency input channel of the matrix mixed audio signal to a low frequency effect compatible speaker(see figs 1-2 and col. 4 line 1- col. 5 line 67);
c) matrix mixing the digital audio signal and outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker(see figs 1-2 and col. 4 line 1- col. 5 line 67);
d) matrix mixing the digital audio signal, decoding the discrete surround channel, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and transmitting discrete ambient noise containing channels of the matrix mixed audio signal to a speaker system operable to create a three dimensional effect (see figs 1-2 and col. 6 line 1- col. 7 line 67);

e) matrix mixing the digital audio signal, decoding the discrete surround channel, and transmitting the discrete ambient noise containing channels of the signal to the speaker system operable to create the three dimensional effect(see figs 1-2 and col. 6 line 1- col. 7 line 67);

f) matrix mixing the digital audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and transmitting the discrete ambient noise containing channels of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect(see figs 1-2 and col. 6 line 1- col. 7 line 67);

g) matrix mixing the digital audio signal and transmitting the discrete ambient noise containing channels of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect(see figs 1-2 and col. 6 line 1- col. 7 line 67);

h) matrix mixing the digital audio signal, decoding the discrete surround channel, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect, and center channel equalizing the input signal(see figs 1-2 and col. 6 line 1- col. 7 line 67);

i) matrix mixing the digital audio signal, decoding the discrete surround channel, and center channel equalizing the matrix mixed audio signal(see figs 1-2 and col. 4 line 1- col. 5 line 67);

j) matrix mixing the digital audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and center channel equalizing the matrix mixed audio signal(see figs 1-2 and col. 4 line 1- col. 5 line 67);

k) matrix mixing the digital audio signal, transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect, and center channel equalizing the matrix mixed audio signal(see figs 1-2 and col. 6 line 1- col. 7 line 67);

l) matrix mixing the digital audio signal, decoding the discrete surround channel of the matrix mixed audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, and center channel equalizing the matrix mixed audio signal(see figs 1-2 and col. 4 line 1- col. 5 line 67);

m) matrix mixing the digital audio signal, outputting the discrete low frequency input channel of the matrix mixed audio signal to the low frequency effect compatible speaker, transmitting the discrete ambient noise containing channel of the matrix mixed audio signal to the speaker system operable to create the three dimensional effect, and center channel equalizing the matrix mixed audio signal(see figs 1-2 and col. 4 line 1- col. 5 line 67); and

n) matrix mixing and center channel equalizing the matrix mixed digital audio signal;

wherein matrix mixing always precedes decoding the surround channel, outputting the low frequency input channel, transmitting the discrete ambient noise containing channel,

and center channel equalizing the matrix mixed audio signal, wherein decoding the surround channel of the audio signal always precedes outputting the low frequency input channel, transmitting the ambient noise containing channel, and center channel equalizing the matrix mixed audio signal, wherein outputting the low frequency input channel always precedes transmitting the ambient noise containing channel, and center channel equalizing the matrix mixed audio signal, and wherein transmitting the discrete ambient noise containing channel always precedes center channel equalizing the matrix mixed audio signal(see figs 1-2 and col. 4 line 1- col. 7 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Eid into Paisley to provide the sound processing system to generate mixed output signals having active matrix decoded signals using the left and right virtual stereo signals and higher fidelity audio signal.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paisley (US PAT. 5,530,760)as modified by Eid (US PAT. 7,177,432) applied to claims 1 above and further in view of Vaudrey (US PAT. 6,442,278).

Consider claim 2, Paisley as modified by Eid does not explicitly teach the matrix mixing the audio signal further comprises applying a downmixing algorithm to the audio signal.

However, Vaudrey teaches the matrix mixing the audio signal further comprises applying a downmixing algorithm to the audio signal (see, Figs. 5, 6, 9, and 9).

Therefore, it would have been obvious to one having ordinary skill in the art to provide such a downmixing algorithm in order to create a three dimensional effect even though there are less speakers than there are channels, as taught by Vaudrey (Figs. 5, 6, 9, and 9).

5. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paisley (US PAT. 5,530,760).

Consider claim 10 Paisley teaches an audio post processing method comprising the following ordered processes:

matrix mixing an audio signal, then decoding a discrete surround channel of the matrix mixed audio signal, then outputting discrete low frequency input channels to a bass compatible speaker(14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67); but Paisley does not expressly discloses a digital audio signal and applying a headphone algorithm to the matrix mixed audio signal.

However, using A/D converter to convert the analog signal to digital signal and applying a headphone algorithm to the matrix mixed audio signal are well known in the art (official notice is taken).

Therefore, it would have been obvious that the audio system as taught by Paisley could have been using A/D converter to convert the analog signal to digital signal and applying a headphone algorithm to the matrix mixed audio signal as claimed to provide such a headphone algorithm to the matrix mixed in order allow the user to connect a

headphone to the system and still create a three dimensional effect and higher fidelity audio signal.

Consider claim 12 Paisley teaches that matrix mixing the audio signal further comprises by extracting at least four channels from the matrix mixed audio signal (14-17 in Fig. 1 and see col. 3 line 65- col. 4 line 67).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paisley (US PAT. 5,530,760) in view of Vaudrey (US PAT. 6,442,278).

Consider claim 11, Paisley does not explicitly teach the matrix mixing the audio signal further comprises applying a downmixing algorithm to the audio signal.

However, Vaudrey teaches the matrix mixing the audio signal further comprises applying a downmixing algorithm to the audio signal (see, Figs. 5, 6, 9, and 9).

Therefore, it would have been obvious to one having ordinary skill in the art to provide such a downmixing algorithm in order to create a three dimensional effect even though there are less speakers than there are channels, as taught by Vaudrey (Figs. 5, 6, 9, and 9).

7. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paisley (US PAT. 5,530,760) in view of Shennib (US PAT. 5,825,894).

Consider claims 13-15 Paisley does not clearly teach the headphone speaker with a center channel of the signal; and driving the headphone speaker with a surround

channel of the matrix mixed audio signal; and transmitting ambient noise to the headphone speaker.

However, Shennib teaches that the headphone speaker with a center channel of the signal (see figs 3 (52) and 5 and see col. 13 line 40-52); and driving the headphone speaker with a surround channel of the matrix mixed audio signal (see figs 3 (52) and 5 and see col. 13 line 40-52); and transmitting ambient noise to the headphone speaker (see figs 3 (52) and 5 and see col. 6 line 19-28 and col. 13 line 40-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Shennib into Paisley to the user for more privacy to listen the sound.

Consider claim 16 Paisley does not explicitly teach the audio post processing further comprising inputting a listener preference and available equipment status into a player console, wherein the listener preference reflects a desired post processing effect.

However, Shennib teaches teach the audio post processing further comprising inputting a listener preference and available equipment status into a player console, wherein the listener preference reflects a desired post processing effect (see figs 7-9 and 24-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Shennib into Paisley to provide more convenience for the user to enter the input signal.

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paisley (US PAT. 5,530,760)as modified by Eid (US PAT. 7,177,432) applied to claims 17-18 above and further in view of Shennib (US PAT. 5,825,894).

Consider claim 19 Paisley does not explicitly teach output amplifiers operable to drive a headphone speaker.

However, Shennib teaches teach output amplifiers operable to drive a headphone speaker (see fig.3, 52 and col.13 line 40-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Shennib into Paisley to the user for more privacy to listen the sound.

9. Claims 10, 12 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eid (US PAT. 7,177,432).

Consider claim 10 Eid teaches an audio post processing method comprising the following ordered processes:

matrix mixing a digital audio signal, then decoding a discrete surround channel of the matrix mixed audio signal, then outputting discrete low frequency input channels to a bass compatible speaker(see figs 1-2 and col. 4 line 1- col. 5 line 67); but Eid does not expressly discloses applying a headphone algorithm to the matrix mixed audio signal.

However, applying a headphone algorithm to the matrix mixed audio signal are well known in the art (official notice is taken).

Therefore, it would have been obvious that the audio system as taught by Eid could have been applying a headphone algorithm to the matrix mixed audio signal as claimed to provide such a headphone algorithm to the matrix mixed in order allow the user to connect a headphone to the system and still create a three dimensional effect .

Consider claim 12 Eid teaches that matrix mixing the audio signal further comprises by extracting at least four channels from the matrix mixed audio signal(see figs 1-2 and col. 4 line 1- col. 5 line 67).

Consider claim 28 Eid teaches an audio post processing system, comprising:

at least one decoder operable to perform the following sequenced processes:

matrix mixing a digital audio signal (see fig.2),

then decoding a discrete surround channel of the matrix mixed audio signal, then outputting discrete low frequency input channels to a bass compatible speaker, then a player console operable to receive a listener input (212); and

a signal source producing the digital audio signal comprised of a plurality of discrete channels, each channel operable to drive a loudspeaker positioned at one or more of a plurality of destinations (see figs 1-2 and col. 4 line 1- col. 5 line 67); but Eid does not expressly discloses applying a headphone algorithm to the matrix mixed audio signal.

However, applying a headphone algorithm to the matrix mixed audio signal is well known in the art (official notice is taken).

Therefore, it would have been obvious that the audio system as taught by Eid could have been applying a headphone algorithm to the matrix mixed audio signal as claimed

to provide such a headphone algorithm to the matrix mixed in order allow the user to connect a headphone to the system and still create a three dimensional effect .

Response to Arguments

10. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arnold (US PAT. 5,850,455) is cited to show other related audio post processing in DVD, DTV and other visual products.

13. Any response to this action should be mailed to:

Mail Stop ____(explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(571) 273-8300

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501 The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See
/Lun-See Lao/
Examiner, Art Unit 2615
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 04-10-2008

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2615